Political Sustainability of Economic reforms

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POLITICAL SUSTAINABILITY OF ECONOMIC REFORMS: DYNAMICS AND ANALYSIS OF REGIONAL ECONOMIC FACTORS[*]

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Abstract

This paper analyzes the political economy of the reform process theoretically and empirically. Building on the framework developed by Rodrik [1995], a two-sector model of a transition economy is constructed. This model is then used to study the dynamics of political support for the reforms. The key role is played by the pattern of flows between the state and private sectors and unemployment. It is shown that while the workers in the private sector always support rapid reforms, the workers in the state sector and the unemployed will support rapid reforms only at the outset of the transition. Later, state-sector workers and unemployed will vote for a reduction in the speed of reforms. The relationship between unemployment and support for the reforms is then tested empirically using regional data from the Czech Republic, Hungary, Poland and Slovakia.

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I. INTRODUCTION

"There are still two options - the road to reform and the other road."[1]

Few years ago, the processes of economic transition started in the countries of Central and Eastern Europe. At the beginning, economic reforms enjoyed remarkable support from virtually every part of the society. However, the economic collapse that followed by far surpassed the expectations. Public support for the reforms deteriorated quickly and the reformers have been replaced by post-communists and/or other leftist parties in the second elections throughout the region. Nevertheless, opinion polls suggest that most of the electorate still supports continuation of the reforms in general. What they are apparently voting for is rather a change in the reform strategy, not a complete reversal. [2] Moreover, they seem to have remained critical about the original reform strategy even after the benefits of the reforms such as rising GDP and stabilization of inflation became evident.

This development is somewhat surprising: the voters vote against the reformers - yet they have benefited from the reforms or at least expect to benefit in the future. Moreover, they do not want to reverse the reforms altogether - only a change in the strategy. There are several possible explanations for this kind of voting behavior. One is that the voters only look backwards, not forwards, when making their choice at the polls. It could be that they lack experience with democratic elections and thus easily fall prey to populism. It is also quite possible that voters are simply unhappy about other effects of the reforms such as increased crime and overall moral decline.[3] However, all there answers should be equally important for all transition countries and thus fail to explain why political sustainability of reforms is a problem in some countries but not in others (for example the Czech Republic).[4] In this paper, we attempt to construct a theoretical model of a transition economy that explains this phenomenon. The key ingredients are the threat of unemployment and diminishing probability of switching from a job in the state sector to a private sector job.

The importance of unemployment during the transition has been stressed in several recent papers. The most noteworthy examples are Aghion and Blanchard [1994], Burda [1993] and Rodrik [1995]. While most models are mainly concerned with the impacts of speed and sequencing of reforms upon their sustainability in general, Rodrik [1995] analyzed the role unemployment plays in determining the dynamics of political support for continuation of the reforms.

Rodrik develops a model of a transition economy consisting of two sectors: low-productivity state sector and high-productivity private sector. At the outset of the transition, the private sector is small but expands during the transition. At the same time, the state sector shrinks. Since the rate at which the state sector contracts is initially lower than the rate of growth of the private sector, transitional unemployment

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[1] Anatoli B. Chubais, Russian President's chief of staff, quoted in International Herald Tribune, Jan. 2, 1996, p.1.

[2] This is true about most or all countries of Centran and Eastern Europe but not necessarily for some of the countries of the former Soviet Union.

[3] See Balcerowicz [1993, Section 6] for related discussion.

[4] Klaus [1993] attributes the electoral success of reformers in the Czech Republic to their ability to win and retain political support for the reforms by, in his words, "permanent campaining."

occurs. Rodrik then analyzes evolution of the workers' support for the pace of the reforms. The pace of the reforms is determined by the extend to which the government subsidizes the state sector. Rodrik argues that while the state sector workers will indeed support the reforms at their outset, they will likely oppose them at a later stage. On the other hand, the unemployed will always favor as rapid reforms as possible as this increases their chances of getting a job in the private sector.

The result regarding the preferences of the unemployed is somewhat surprising and seems counterfactual. As we will show, this conclusion is due to the assumption that unemployment will eventually vanish in the transition economy and that workers receive no income while unemployed.

We build on Rodrik's model but include three important modifications: long-run unemployment, inclusion of unemployment benefits in the government budget policy and an exogenous shock to the state sector employment at the outset of the transition. These changes make the model slightly more complicated but also render it more realistic. More importantly, these modifications overturn the key results of Rodrik's analysis and deliver a more appealing prediction regarding voting behavior for the unemployed. We show that while all voters will support rapid reforms at an early stage of the reforms, at a later stage both state-sector workers and unemployed workers will support a policy change resulting in a reduction in the speed of reforms. We then test the prediction of our model also empirically using data on recent elections in the Czech Republic, Hungary, Poland and Slovakia. Negative impacts of the economic reforms were distributed disproportionally across individual regions. Similarly, political preferences of voters also varied substantially across the regions. In our empirical test, we utilize this fact and attempt to find a relationship between unemployment and support for reforms.

Our model suggests that voters in the regions hit hard by unemployment will be more inclined to vote for the parties opposing the reforms, and vice versa. On the other hand, Rodrik's model delivers precisely the opposite result. We test for the relationship between unemployment and political support by running regressions of regional election results on regional unemployment rates. The results show rather strong positive relationship between unemployment and votes for left-wing parties and negative relationship between unemployment and votes for pro-reform parties. The results for nationalists are mixed and rather weak though. Overall, the empirical results thus throw support behind the results of our model. This indicates that the continuation of rapid economic reforms is substantially more politically fragile than suggested by Rodrik's analysis.

The paper is structured as follows: Section II summarized the stylized facts of transitional unemployment in Centran and Eastern Europe. Section III present the model and Section IV explains the nature of the flows in and out of employment in the two sectors and unemployment and resulting expected utilities of the workers. Section V then analyzes the evolution of workers' preferences for a government policy and speed of reforms. Section VI presents the results of the empirical analysis of the data. Finally, Section VII concludes.

II. STYLIZED FACTS OF TRANSITIONAL UNEMPLOYMENT IN CENTRAL AND EASTERN EUROPE

Dynamics and characteristics of unemployment in Centran and Eastern Europe exhibit several features distinct from unemployment experienced by developed countries. These distinctions can be briefly summarized as the stylized facts of transitional unemployment in Centran and Eastern Europe:

Unemployment reached high levels quickly and has remained high. Unemployment was more or less unknown in Central and Eastern Europe prior to the transition. Then, however, unemployment rate increased rapidly during the first year of transition and remained quite high during subsequent years. As can be seen from Table I, unemployment rate rose from one to two percent in 1990 (six percent in Poland) to ten to twelve percent in Hungary, Slovakia and Poland and over four percent in the Czech Republic. Furthermore, while the unemployment rate fell somewhat since then, the prospects that it would decline substantially in the future are rather small. According to WIIW[5], unemployment rates will be ten to fourteen percent in most Centran and Eastern Europe countries in 1996, with the notable exception of the Czech Republic.

Long-term unemployment accounts for a large and still increasing portion of unemployment. In Poland, 39 % of unemployed by mid 1993 were without work for more than a year, 14 % for more than two years.[6] In Slovakia, 53 % of the unemployed were without work for more a year while only 16 % were unemployed for less than three months (as of the first three quarters of 1995). In the preceding year, these figures stood at 39 % and 19 %, respectively.[7] According to Boeri [1996], long-term unemployed account for more than 50 % of total unemployment also in Hungary and Bulgaria.

Economic growth and growth of private entrepreneurship seem to have mattered little to reduce unemployment, at least for the time being. Expansion of the newly forming private sectors occurs mainly by recruiting workers from the public sector, not from the pool of unemployed. According to Aghion and Blanchard [1994], in Poland "half of all gross flows [in 1992] were directly from employment to employment, and half to or from unemployment or non participation."[8] Dorenbos [1996] makes a similar conclusion regarding Hungary.

Unemployment rates vary substantially across regions. While unemployment is nearly negligible is some regions (mainly capitals and larger cities), it can be as high as 30 % in other regions. This reflects the unequal distribution of the costs and benefits of the economic reforms within a country.

These stylized facts are applied in the formulation of the model in the next Section.

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[5] "Osteuropas Wachstum gebremst, Wiener Institut revidiert Prognose," Die Presse (Austria), July 13, 1996, p. 23.

[6] Aghion and Blanchard [1994], pp. 9-10.

[7] Statistical Office of Slovak Republic [1995], p.11.

[8] Aghion and Blanchard [1994], p. 9.

III. MODEL

In this paper, we construct a model of an economy in transition based on the model developed in Rodrik [1995]. However, we introduce three modifications:

1. some agents face long-term unemployment, i.e. once unemployment occurrs it will not fall below certain positive value;
2. government's expenditure includes also unemployment benefits and the level of benefits is positively related to the level of subsidies to the state sector;
3. exogenous shock occurs in the state sector at the beginning of the transition.

The first two modifications not only make the model more realistic and in line with the stylized facts of unemployment in Centran and Eastern Europe (see Section II) - they alter substantially the model's predictions regarding the preferences of the unemployed. The third modification does not critically affect the results of the analysis but is included for the sake of convenience (it accelerates the restructuring process in the early phases of the transition) and realism. We will point out these modifications again as we go along.

The economy consists of a state sector and a private sector. The number of workers employed in the state and private sectors is N_t and M_t, respectively, at each time t. The size of the labor force is normalized to unity so that $N_t + M_t + U_t = 1$, with U_t standing for unemployment at time t. At the outset of the transition, most or all workers are employed in the state sector and unemployment is negligible. The transition entails structural changes that result in a contraction of the state sector and expansion of the private sector. The transition is completed when the sizes of the state and private sectors reach N* and M*, respectively. However, unlike in the original Rodrik's models, unemployment does not vanish during the transition, i.e. N*+M*<1. The process of restructuring goes along the following paths:

$$N_1 = N_0 - \tilde{U} + \theta(N^* - N_0); \tag{1}$$

$$N_t = N_{t-1} + \theta(N^* - N_{t-1}), \text{ with } t > 1; \tag{2}$$

$$M_t = M_{t-1} + k\theta(M^* - M_{t-1}); \tag{3}$$

$$U_t = 1 - N_t - M_t \quad \text{for all t;} \tag{4}$$

where θ is the speed of adjustment and k is a coefficient such that $0 < k < 1$. The speed of adjustment θ is a function of government's policy: $\theta = \theta(\sigma_t)$, where σ_t is the level of subsidy per worker in the state sector at time t and $\theta'(\sigma_t) < 0$. Thus, greater degree of the government's involvement implies lower speed of transition (see below).

Before the outset of the transition, at time t = 0, unemployment is zero. The restructuring starts at t = 1 and during this period the state sector is subjected to a one-time exogenous shock $\tilde{U}$. This element in the restructuring process is to capture the shock therapy nature of the reform and refers to the effect of an abrupt liberalization of prices and foreign trade. The occurrence of the shock at t = 1 constitutes again a modification to the original Rodrik's model.

Figure I shows the evolution of employment in the state and private sectors, unemployment and output. These paths are simulated assuming a constant $\theta = .2$, $k = .5$, $N^* = .20$ and $M^* = .75$. The initial employment levels of the state and private sectors are $N_0 = .80$ and $M_0 = .20$. Finally, output is computed as a sum of the outputs

of the two sectors, assuming productivity is unity in the state sector and $\lambda = 1.5$ in the private sector (by definition, productivity in the private sector is greater than in the state sector).

As can be seen in Figure I, unemployment increases sharply after the start of the transition and peaks at 20 % in t = 5. Then it declines gradually. Output, similarly, declines during the early stages of the reforms but it bounces back in and after t = 4. This is roughly similar to the actual developments recorded in Centran and Eastern Europe countries - given the simplified nature of the model.

Government policy involves seting the subsidy to the state sector. Unemployment benefits and taxes on the private sector are then determined so as to balance the government budged every period:

(5) $$M_t \tau_t = (N_t + \mu U_t) \sigma_t$$

where σ_t is the per-worker subsidy to the state sector and $\mu\sigma_t$, is the average transfer payment received by an unemployed worker. The level of unemployment benefits is determined as a function of the subsidy where μ is a positive coefficient.[9] Inclusion of unemployment benefits in government expenditure and linking them with the subsidy makes this design of government budget different from the original Rodrik's model. The expenditure is financed by an income tax on the private sector.[10]

The results of the model will not be significantly altered if unemployment benefits are greater or lower than the subsidy. However, it is quite important that it be linked to the subsidy. This reflects the intuitive fact that a government that preserves high subsidies to the state sector usually also tends to be more inclined toward greater redistribution of income to the poor (i.e. also the unemployed). The level of benefits here can be understood also as including other aspect of the government's labor market policy such as setting eligibility requirements, determining the length of the period during which benefits are received etc.

The government's choice of the level of subsidies in turn determines the speed of transition. A high subsidy implies low θ and thus a gradual reform. On the other hand, a low subsidy gives rise to high θ and a shock therapy reform is implemented. Figures II, III and IV show different transition paths resulting from different choices of θ. While Figure I is drawn with $\theta = .20$, Figure II uses $\theta = .50$, Figure III has $\theta = .05$ and in Figure IV $\theta = .01$.

The production function in the state and private sectors is $Y_t = N_t$ and $Y_t = \lambda M_t$, respectively. Productivity in the state sector is thus unity while private sector's productivity is $\lambda > 1$. Gross wages in both sectors are equal to the marginal products of labor in that sector. The net wage in the state sector is then $w_t^s = (1 + \sigma_t)$ and in the private sector it is $w_t^p = (\lambda - \tau_t)$. Income of an unemployed worker is $\mu\sigma_t$ (Rodrik's original model assumes that the income of the unemployed is zero). This has a significant effect upon determining the voting behavior of unemployed workers as will become obvious in Section V.

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[9] Rodrik's model, on the other hand, corresponds to the case with $\mu = 0$.

[10] In fact, state-owned enterprises do pay taxes too. The subsidy here can be interpreted as the net cash inflow to the state sector. It is assumed to be non-negative by definition.

IV. FLOWS IN AND OUT OF EMPLOYMENT

The two sectors in the model evolve as follows: The state sector shrinks every period until its size equals N*. Thus, (N_t - N_{t-1}) workers are laid off every period. (M_t - M_{t-1}) workers are hired every period in the private sector until its size reaches M*. Since the private sector never shrinks in this model, once hired the workers in the private sector are never laid off. Due to the initial shock $\tilde{U}$ and because the speed of contraction in the state sector is greater than the speed of expansion of the private sector early in the transition, transitional unemployment occurs. Furthermore, once the transition started, unemployment rate will never fall below its natural rate U* (thus, U* = 0 in Rodrik's model).

The remainder of this Section closely follows the way of reasoning of Rodrik, using the modified underlying assumptions of Section III.

Workers do not need to become unemployed before they can get a job in the private sector. Thus, state-sector workers as well as unemployed will get a job in the private sector in period t with the probability[11]

$$z_t = \frac{M_t - M_{t-1}}{N_{t-1} + U_{t-1}}. \tag{6}$$

At the same time, the probability of losing the job in the state sector (separation rate) in period t is[12]

$$q_t = -\frac{N_t - N_{t-1}}{N_{t-1}}. \tag{7}$$

Due to the different speeds of contraction of the state sector and expansion of the private sector, z_t exceeds q_t early in the transition while the opposite will eventually become true as the size of the private sector gets sufficiently large. At this point, new jobs become available in the state sector as well. The probability that an unemployed worker will get a state-sector job at period t is then[13]

$$f_t = \max\left[\frac{(z_t - q_t)N_{t-1}}{(1 - z_t)U_{t-1}}, 0\right]. \tag{8}$$

The instantaneous utility functions of the workers in the state sector, private sector and the unemployed are given as v_t^s, v_t^p and v_t^u, where v_t is an increasing and concave function of wages w_t^i (i=s, p, u).

The expected utility function of a worker who is employed in the private sector at time t is the sum of his future instantaneous utilities discounted at rate δ. Since the tax is levied on the wages in the private sector, the utility of the workers in this sector is negatively related to the tax rate τ_t,

$$W_t^p = \sum_{s=t}^{\infty} v_s^p \delta^{s-t}. \tag{9}$$

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[11] This is identical to Equation (8) in Rodrik [1995].
[12] This is identical to Equation (9) in Rodrik [1995].
[13] This is identical to Equation (10) in Rodrik [1995].

A worker in the state sector can remain in this sector or can be employed in the private sector or become unemployed. To describe his expected utility function, we need to determine the probabilities of these three possibilities.[14] The probability that a worker who is in the state sector at time t will have a private-sector job at time s is $r_{t,}$[15]

$$r_t = 1 - \prod_{i=t}^{s} (1 - z_i). \tag{10}$$

The probability that the worker who held a state-sector job at time t will be unemployed at time s is $c_{t,}$[16]

$$\begin{aligned} c_t &= \max(q_t - z_t, 0) \prod_{j=t}^{s} \left[1 - \left(z_j + (1 - z_j) f_j\right)\right] \\ &+ \sum_{i=t+1}^{s} \max(q_i - z_i, 0) \prod_{k=t}^{i-1} \left[1 - \max(q_k - z_{k,0}) \prod_{j=i}^{s} \left[1 - \left(z_j + (1 - z_j) f_j\right)\right]\right]. \end{aligned} \tag{11}$$

Finally, the probability that a worker who held a state-sector job at time t will remain in the state sector also in time s is p_t[17]

$$p_t = 1 - r_t - c_t. \tag{12}$$

Thus, the utility function of a worker who is employed in the state sector at time t is the sum of his future instantaneous utilities discounted at rate δ[18]

$$W_t^s = \sum_{s=t}^{\infty} \left[p_s v_s^s + r_s v_s^p + c_s v_s^u\right] \delta^{s-t}. \tag{13}$$

A worker who is unemployed at time t will be employed in the private sector at time s with the probability r_t given above. The probability that this worker will hold a state-sector job at time s is $d_{t,}$[19]

$$d_t = f_t \prod_{j=t}^{s} (1 - z_j) + \sum_{i=t+1}^{s} f_i \prod_{k=t}^{i-1} [1 - f_k] \prod_{j=i}^{s} (1 - z_j). \tag{14}$$

The probability that he will remain unemployed is e_t,

$$e_t = 1 - r_t - d_t. \tag{15}$$

Thus, the utility function of this worker is[20]

$$W_t^u = \sum_{s=t}^{\infty} \left[d_s v_s^s + r_s v_s^p + e_s v_s^u\right] \delta^{s-t}. \tag{16}$$

Figures V and VI show the evolution of the probabilities described above. For a state-sector worker, the probability of getting a job in the private sector, r_t, is fairly high during the early phase of the transition. However, it converges to zero rather quickly. The probability of becoming unemployed is also rather high early in the

[14] See Rodrik [1995] pp.10-11 for a more detailed derivation.
[15] This is identical to Equation (12) in Rodrik [1995].
[16] This corresponds to Equation (13) in Rodrik [1995].
[17] Equivalent to Equation (14) in Rodrik [1995].
[18] Cf. Equation (15) in Rodrik [1995], Rodrik's formulation does not include the third term.
[19] Cf. Equation (16) in Rodrik [1995].
[20] Cf. Equation (17) in Rodrik [1995], Rodrik's formulation does not include the third term.

transition but later it also converges to zero. On the other hand, the probability of remaining in the state sector is continuously growing and converges to unity.

In the case of an unemployed worker, the probability of getting a job in the private sector is also fairly high during the early phase of the transition but it is declining continuously and approaches zero. The probability of obtaining a state-sector job is increasing initially but starts to fall later and also converges to zero. Finally, while the probability of remaining unemployed declines early in the transition, it starts to increase later and eventually converges to unity.

Thus, as can be seen from the figures, both state-sector workers as well as unemployed have little prospect of a status change late in the transition process. While the position of the workers in the state sector is quite similar to the Rodrik's model, the situation of the unemployed is precisely opposite here. In fact, in Rodrik's model, the unemployed will get a job in either state or a private sector eventually. This substantially alters the conclusion derived regarding their voting decisions which is the subject of the next Section.

V. DYNAMICS OF WORKERS' PREFERENCES

In this Section, we will analyze the dynamics of workers' preferences as to the choice of the speed of reform. We will do this by looking at the evolution of the expected utility functions for the three categories of the workers. For the purpose of this analysis, we take the subsidy as being constant over time and hence denote it as σ. We then study the dynamics of workers' preferences regarding the subsidy.[21] We will again follow a line of reasoning analogous to Rodrik [1995] and compare our results with his.

The preferences of the workers in the private sector are clear. Because this sector never shrinks in the model, they enjoy virtually absolute job security. Since the tax to finance government expenditure is levied on the private sector, the workers in this sector will always prefer as small subsidy as possible.

Analyzing the dynamics of the preferences of the state-sector workers is more complicated. Early in the transition, their expected utility is increasing because of the possibility to get a job in the private sector. As t gets larger, flows in and out of each sector become small and eventually cease altogether. This makes the expected utility of the state-sector workers decline somewhat and converge to a fixed number. For a higher level of the subsidy the value of this limit will also be higher, and vice versa. Thus, we can make the following conclusion regarding the preferences of the state-sector workers (equivalent to Rodrik's Result 1):

Proposition 1: The expected utility of a state sector worker converges in the limit to a positive value which is strictly increasing in σ. The expected utility converges to this limit from above:

[21] Figure VII shows evolution of expected utility for the three categories of workers receive during the transition for a given subsidy $\sigma = 0.10$.

$$\lim_{t\to\infty} W_t^s = \bar{W}^s(\sigma) > 0$$

(17) $$\frac{\partial \bar{W}^s(\sigma)}{\partial \sigma} > 0 \quad ;$$

(18) $\exists$ t* such that $\frac{\partial W_t^s}{\partial t} < 0$ for t > t*, for a given σ.

The first part of Proposition 1 [Equation (17)] holds because as t get large, r_t and c_t converge to zero while p_t converges to unity. The expected utility of a worker is thus determined primarily by his expected earnings from a state-sector job and is hence positively related to the level of subsidy. The second part of Proposition 1 [Equation (18)] says that there exists a t* such that the expected utility will be decreasing for all t > t*: Thus, once the transition is beyond t*, the expected utility of the state-sector workers can only increase by increasing the level of subsidy. This conclusion is not much different (not surprisingly) from the conclusion derived by Rodrik.

Now we turn to the analysis of the preferences of the workers who are unemployed at time t. The position of the unemployed in this model is quite different than is the case in Rodrik's original model. This is so due to two important modifications: First, unemployment is persistent and thus never drops below certain level (U*). Second, the unemployed workers receive benefits linked to the per-worker subsidy received by the state-sector workers. These two modifications are intended to render the model more realistic.

The evolution of expected utility of the unemployed workers is shown in Figure VII. It can be seen that the utility initially increases as the probability of getting a private-sector is increasing early in the transition (see Figure VI). However, as t gets larger, the probability of getting a private-sector job gradually converges to zero and the workers are facing a growing probability of remaining unemployed permanently. This makes their expected utility fall.

Thus, the conclusion derived for the unemployed workers is in fact quite similar to the conclusion stated for the state-sector workers.

Proposition 2: The expected utility of an unemployed worker converges in the limit to a positive value which is strictly increasing in σ. The expected utility converges to this limit from above:

$$\lim_{t\to\infty} W_t^u = \bar{W}^u(\sigma) > 0$$

(19) $$\frac{\partial \bar{W}^u(\sigma)}{\partial \sigma} > 0 \quad ;$$

(20) $\exists$ t** such that $\frac{\partial W_t^u}{\partial t} < 0$ for t > t**, for a given σ.

This conclusion is, as a result of the above discussed modifications, quite opposite from Rodrik's result regarding the unemployed. This is due to the modified assumptions regarding unemployment, as discussed above. This makes our version of the model more realistic and in accord with the stylized facts of unemployment (see Section II).

The above derived conclusions about the dynamics of expected utility of state-sector and unemployed workers enables us to derive further conclusions about the preferences of workers for a particular level of subsidy. We thus now look how different levels subsidy (and hence different speed of reform) affect the expected utility of workers in the state sector and the unemployed:

Proposition 3: For λ sufficiently high, W_t^s and W_t^u follow U-shaped curves with respect to the value of σ:

$$\frac{\partial W_t^i}{\partial \sigma} < 0 \text{ for small } \sigma \text{ and } \frac{\partial W_t^i}{\partial \sigma} > 0 \text{ for large } \sigma, \; i = s, u. \tag{21}$$

Proposition 3 is derived and proved in Rodrik [1995][22] for the case of state-sector workers. After our modifications of Rodrik's model, this result holds also in the case of the unemployed.[23] Proposition 3 implies that starting with $\sigma = 0$, expected utility will initially decline and then increase for increasing values of σ. It should be noted that the condition that λ be sufficiently high is more important in the case of the state-sector workers where significantly higher productivity in the private sector is necessary for the result to hold. For the unemployed, Proposition 3 holds even for relatively low λ (provided $\lambda > 1$).

Proposition 3 has an important implication in case when there is an upper limit on the feasible level of subsidy. Such a limit is likely to be in place especially at the beginning of the reforms when too high a subsidy would push the wages in the private sector below state-sector wages.[24] Then, workers in the state sector and/or unemployed may prefer no subsidy rather than the maximum feasible subsidy σ_{max}:

Proposition 4: At the outset of the reform, state-sector worker and/or unemployed will prefer the maximum feasible subsidy σ_{max} to zero subsidy if $W_0^i(\sigma_{max}) > W_0^i(0)$, where i = s, u. Otherwise, the worker will select $\sigma = 0$.[25]

Proposition 4 describes conditions under which workers in the state-sectors and/or unemployed will support shock therapy reform (i.e. $\sigma = 0$) to gradual reform ($\sigma = 0$) if elections are held at t = 0.[26]

Our final conclusion refers to the case when state-sector workers and unemployed change their minds some time during the course of reforms:

Proposition 5: There exists a T^s (T^u) such that at time $t \geq T^s$ ($t \geq T^u$), workers in the state sector (unemployed workers) will always prefer a change from zero subsidy to any σ' ($0 < \sigma' \leq \sigma_{max}$).[27]

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[22] See Result 3 in Rodrik [1995].

[23] The proof of Proposition 3 for the case of the unemployed is analogous to the proof for the state-sector workers and is thus not presented here to save on space.

[24] This is so because of the small size of the private sector and large size of the state sector at the beginning of the transition. Even small per-capita subsidy might result in too high taxes and thus making the private sector unattractive.

[25] Cf. Result 4 in Rodrik [1995].

[26] Note that it is possible that preferences of workers in the state sector and unemployed will differ. It may well be the case that state-sector workers will be in favor of gradual reform while unemployed will vote for shock therapy. The opposite is rather unlikely though since the unemployed stand to gain relatively more from the increased job creation in the private sector in case of rapid reform.

Thus, if elections are held at or after period $t = T^s$ ($t = T^u$), workers in the state sector (unemployed workers) will vote for an increase of the subsidy and thus slow down of the reforms. Note that T^s may not necessarily be the same as T^u. In fact, the general case will be $T^s \leq T^u$.[28]

In this Section, we have shown that under the modified assumptions about unemployment, Rodrik's result regarding the preferences of the unemployed will be overturned. In fact, the dynamics of the preferences of the unemployed follow a pattern similar to that of the state-sector workers. If the conclusions of this Section are correct, the parties advocating slow down or even reversal of the reforms should do better if unemployment is high. This assumption can indeed be tested empirically. In the next Section, we analyze the relationship between regional election results and regional unemployment rates (county level) in four Centran and Eastern Europe countries: the Czech Republic, Hungary, Poland and Slovakia.

VI. EMPIRICAL ANALYSIS

In this Section, we perform an empirical test of the relationship between the voters' preferences and unemployment rate. According to the theoretical model described in the preceding sections, while rapid reforms may enjoy overall support at the outset of the transition, the unemployed will support parties advocating slow pace of reforms if elections are held later in the transition process. This is in sharp contrast with Rodrik's conclusion that unemployed will actually vote for rapid reforms at any time during the transition.

The statistics reveal a rather uneven regional distribution of costs and benefits of the reforms. Unemployment rate is lower and income level is higher in some regions, especially urban areas while rural areas are often stricken with extremely high unemployment and low income levels. Voters' preferences, too, vary substantially from region to region. In this Section, we will try to determine whether there is a possible link between the two - regional disparities of economic statistics and different political developments in regions.[29]

To determine whether there is a relationship between economic situation and voters' preferences, we run regressions of the regional elections results with unemployment as explanatory variable. Elections results are expressed as the percentage of votes received by a party (or candidate) in each region. Unemployment

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[27] The proof follows Rodrik [1995]: Let $\bar{W}^i(\sigma')$ with i= s, u, be the limit of expected utility of state-sector workers and unemployed, respectively, in case when the reforms started off with $\sigma = 0$ and switched to σ' at and after T^s (T^u). Let $\bar{W}^i(0)$ with i= s, u, be the limit of expected utility of state-sector workers and unemployed, respectively, in case when $\sigma = 0$ is sustained. Then from Proposition 1 and Proposition 2 we know that $\bar{W}^i(\sigma') > \bar{W}^i(0)$. Then, there must be a T^s (T^u) such that $W_T^i(\sigma') > W_T^i(0)$, with i = s, u.

[28] Again, this is so because the unemployed stand to gain relatively more from the increased job creation in the private sector in case of rapid reform.

[29] Our attention is primarily focused on unemployment as this also is the focus of the preceding Sections. Role of average income levels in determining voters' preferences is briefly discussed below too but no empirical results are presented to save on space.

rates used in the regressions are year-end values pertaining to the election year (if available) or closest year prior to the elections. All data are at the level of counties (*okres* in the Czech Republic and Slovakia, *wojewodztwo* in Poland and *megye* in Hungary). The sample sizes are 76 for the Czech Republic, 38 for Slovakia, 20 for Hungary and 49 for Poland. The data were compiled from various publications of the national Statistical Offices of the respective countries as well as press reports.[30]

The analysis includes elections to the Czech parliament in June 1992, elections to the Slovak parliament in June 1992 and September 1994, Polish Sejm (lower house of the parliament) elections in September 1993, Hungarian parliamentary elections in May 1994 and the second round of Polish presidential elections in December 1995. We only analyze the second and subsequent elections after the collapse of the communist regime. The first post-communists elections are not included because they took place either before the process of economic reforms started or very early in the transition. Thus the specific issues pertaining to the process of economic transition were likely not reflected in the first post-communist elections.

According to the results of the analysis performed in the preceding Sections, the regional election results of the pro-reform parties should be negatively related to regional unemployment rate. On the other hand, the votes for the post-communists, other left-wing parties and nationalists should be positively related to unemployment. In the remainder of this Section, we estimate the coefficients of unemployment rate for different regression equations and test whether these coefficients are significant.

As the first test we run regressions for the individual parties with regional unemployment rates as explanatory variable. In the regression for the Czech Republic, an additional regional dummy variable was also included in the data set to distinguish Bohemian and Moravian counties.[31] Similarly, in the regressions for Slovakia, the percentage of the Hungarian minority in the total population is included as an additional explanatory variable.[32]

The results of the OLS regressions are summarized in Table II. The fact that the correlation coefficients do not exceed 0.50 in most cases indicates that while unemployment may be an important factor in determining voters' preferences, it is certainly not the sole factor. The regression results overall support the results of the model derived in the preceding Sections. There are some differences between the four countries though. In the Czech Republic, all four parties that formed the original coalition faced negative effect of unemployment - as expected. Three coefficient values are significant at 10% or less. Similarly, all three left-wing parties benefited from unemployment and two of them have significant coefficients. The impact of unemployment on nationalist was positive and significant but with a very low correlation coefficient.

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[30] See Appendix I for precise statement of sources of data.

[31] Bohemia and Moravia are the two parts of the Czech Republic. The dummy takes value of one if the county is located in Moravia and zero otherwise. This dummy is to capture the preferences of many Moravians for a greater autonomy of this region. HSD-SMS has made this a center of its election program.

[32] Hungarians make up some 11 % of the total population in Slovakia but they are strongly concentrated in the regions along the Hungarian border. There are three parties seeking to represent Hungarian interests in Slovakia.

The results for Slovakia are weaker. Two of the three pro-reform parties have negative coefficient values for unemployment both in 1992 and 1994 (one significant in 1992 and both in 1994). However, the third party has a positive coefficient which is significant in 1992. For the leftist parties, two coefficients have positive sign both in 1992 and 1994 but only one is significant in each year. The main nationalist party actually shows precisely opposite result than expected - a negative and significant coefficient.

Hungarian regression yielded better results with all pro-reform and left-wing parties having the expected sings of coefficients for unemployment. One party from each category has a coefficient that is not significant though and these two parties also have substantially lower correlation coefficients. In the case of nationalists, the results are mixed and all insignificant.

Finally, the results for Poland show that unemployment is relatively less important a factor in this country. This is evident from the relatively low values of correlation coefficients for the parliamentary elections. However, both pro-reform as well as left-wing parties have the expected sign of coefficients for unemployment and these are mostly significant. In the presidential elections, on the other hand, unemployment did play an important role. The incumbent Lech Wałesa incurred a loss of votes due to unemployment to the benefit of the post-communist Alexander Kwasniewski.[33]

Thus overall the data show a negative and mostly significant relationship between the election results of the pro-reform parties and unemployment rates. The relationship between the election results of the left-wing parties and unemployment is positive and likewise mostly significant. However, the results for the nationalist parties are weaker - often non-significant and/or showing wrong sign (i.e. negative).

Another step in the analysis involved running the regressions with the election results aggregated according to the political orientation of the parties. The parties were classified into three groups: reformists (REF), leftists (LEFT) and nationalists (NAT). For Slovakia, ethnic Hungarian parties were classified separately (HUN). The results of the regressions are summarized in Table III.[34] In some cases, the results for nationalists were not reported as they were not significant.

The regressions give similar results as above. The results are significant for both reformists and leftists in Czech 1992 elections and have the right signs: negative for the reformists and positive for the leftists. In Slovak 1992 elections, the leftists show a significant positive effect of unemployment while the result for the reformists is not significant. Similar result is obtained for 1994 but in this year the coefficient for the reformists is negative - although not significant. Nationalists show a significant relationship only in 1992, however, with a wrong sign. In Hungarian elections, coefficients for both reformists and nationalists are significant and have the expected signs. Similarly, the results for Polish 1993 parliamentary elections are also significant and have the expected signs for the reformists and leftists.

[33] Interestingly, this transfer of votes turns out to be one-for-one when no other explanatory variables are included.

[34] The data used in these regressions are also presented in Figures VIII through XII.

Finally, the third step in the analysis involved running a regression with the election results aggregated according to the political orientation across all four countries together.[35] This resulted in a data set with 221 observations. Besides unemployment rate corresponding to the election year, country dummy variables were also included on the right-hand side. Pooled data set is used in order to take advantage of a larger sample size as well as to capture not only intracountry differences in unemployment rates but as well intercountry differences. The results are summarized in Table IV.

The results of this regression again support the result of the model: the election results of the reformists were negatively affected by unemployment while the election results of the leftists received a positive effect from unemployment. Both results for reformists and leftists are thus significant and have the expected sign. The results for nationalists are also significant but show the opposite sign than expected.

In addition to testing for the role of unemployment in determining voters' preferences, we also ran regressions which included average wages as an additional variable besides unemployment. Intuition suggests that voters in the regions that enjoy higher wages should be more confident about the reforms than the voters in poorer regions. Thus, average regional wages should be positively related to the election results of the pro-reform parties and negatively related to the election results of the left-wing and nationalist parties. However, the results for wages were weaker than the results for unemployment. Nevertheless, they throw additional support for the hypothesis that economic factors influence voters' preferences. In particular, pro-reform parties enjoy greater support in the regions with higher average wages while left-wing parties fare better in poorer regions.[36]

VII. CONCLUSIONS

It is generally accepted that the economy's performance affects the voters' decisions when they approach the polls. The voters penalize the government for poor economic performance in the times of recession by voting for the opposition. The countries of Central and Eastern Europe went through severe recession since they started the programs of economic and political reforms. Although the reforms enjoyed tremendous public support at their outset, this support deteriorated rather quickly as the reforms progressed. In this paper, we look at some of the economic factors potentially affecting formation of voters' preferences. The key ingredients are the threat of unemployment and diminishing probability of switching from a job in the state sector to a private sector job.

To study the impact of unemployment upon voters' preferences, we build on a model developed in Rodrik [1995]. This model simulates an economy consisting of a state sector and a private sector. During the transition process, the state sector contracts while the private sector expands and transitional unemployment occurs. However, our model differs from Rodrik in three important aspects: unemployment does not vanish even after the transition is completed, unemployment benefits enter into the government's policy choice, and an exogenous shock to the state sector occurs at the outset of the transition.

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[35] Both Slovak elections were included. Polish presidential elections were not included.

[36] These results are not presented here but are available upon request.

The government chooses the level of subsidy to the state sector as well as the unemployment benefits. The higher these are the lower is the speed of transition. The government expenditure is financed by a tax on the private sector. We study the evolution of voters' preferences for the level of subsidy. It is shown that the workers employed in the private sector will always support lowest subsidy possible since it reduces their earnings. The workers in the state sector and unemployed may also support a low level of the subsidy early in the transition process. This is so because the probability that they get a private-sector job in the future is high at this stage and lower subsidy thus increases their expected future earnings. However, after certain point, the other effect of increasing the subsidy dominates. As the probability of getting a private-sector job falls with the progress of restructuring, the expected utility of the state-sector workers will increase if the subsidy is raised. The same holds for the unemployed. Hence, later during the transition, state-sector workers and unemployed will prefer the highest level of subsidy possible. They will thus support slowing down the pace of reforms.

To test these conclusions, we then use data on recent elections in the Czech Republic, Hungary, Poland and Slovakia. The analysis is performed by running regressions of regional election results on regional unemployment rates (at the level of counties). The results display overall support for the conclusions, showing negative relationship between the election results of the pro-reform parties and unemployment and positive relationship between the election results of the left-wing parties and unemployment. The results for the nationalist parties are in general weaker and mixed.

These results show that the continuation of the economic reforms can indeed be put at question if unemployment gets too high. This explains the strong showing of post-communists in Poland and Hungary and left-wing nationalists in Slovakia as well as in many other countries in Central and Eastern Europe. It also explains the strong position of reformists in the Czech Republic where the unemployment rate is low.

A policy implication, derived from these results, could be that the economic reforms should be designed in such a way as to avoid excessive unemployment. This does not necessarily imply support for a gradual approach to reforms though. High unemployment was recorded both in Poland, where a shock-therapy reform has been pursued, as well as in Hungary where the reforms were more gradual. In fact, a rather fast restructuring through privatization may indeed prove to be less painful and costly than slow *marketizing* of state-owned enterprises. It is not just the excessive unemployment that can put continuation of the reforms at question. The larger is the portion of labor force remaining in the state sector at the time of elections, the greater is the chance left-wing parties will claim victory. The Czech Republic seems to document this fact.

It should also be noted that although the reformists were voted out of power in Poland, Hungary and Slovakia, the very continuation of the reforms has not been threatened in any of these countries.

VIII. APPENDIX I: DATA SOURCES

The Czech Republic:

Statistical Yearbook 1991, Czech Statistical Office

The Czech Republic, More than Prague, Institute for Advanced Studies, Vienna, Austria; CERGE, Charles University, Prague, Czech Republic and The Economics Institute of the Czech Academy of Sciences, Prague, Czech Republic, 1994

Vysledky voleb do FS a CNR 1992 (Results of Election to the Federal Parliament and the Czech National Council, 1992), Czech Statistical Office

Slovakia:

The Bulletin, Statistical Office of the Slovak Republic, various issues

The Slovak Republic After One Year of Independence, Institute for Advanced Studies, Vienna, Austria and Center for Economic Strategies of the Slovak Republic, Bratislava, Slovakia, 1994

Vysledky hlasovania, politicke strany podla okresov (Election Results by Counties), Statistical Office of the Slovak Republic, 1992

Volby do Narodnej rady Slovenskej republiky (Elections to the National Council of the Slovak Republic), Statistical Office of the Slovak Republic, 1994

Hungary:

Hungary, Institute for Advanced Studies, Vienna, Austria, 1995

A teruleti listak eredmenyei, Magyar Nemzet, May 10, 1994, p.3

Poland:

Rocznik Statystyczny (Statistical Yearbook), Main Statistical Office, 1991-1994

Poland, Eastern Europe's Tiger, Institute for Advanced Studies, Vienna, Austria and Center for Social and Economic Research, Warsaw, Poland, 1995

Bulletin of Electoral Statistics and Public Opinion Research Data, East European Politics and Societies Vol. 8 No. 2, pp. 369-79

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Olsen, Heather Lynn, "Left Turn: The Electoral Triumph of Post-Communist Parties in Poland and Hungary", University of Virginia, mimeo. (1995).

Pacek, Alexander C., "Macroeconomic Conditions and Electoral Politics in East Central Europe," *American Journal of Political Science* 38 (1994) 723-44.

Rodrik, Dani, "The Dynamics of Political Support for Reforms in Economies in Transition," *Journal of the Japanese and International Economies* 9 (4) (1995) 403-25.

Sachs, Jeffrey, "Social Conflict and Populist Policies in Latin America," *NBER Working Paper No. 2897* (1989).

_____, "Postcommunist Parties and the Politics of Entitlements," *TRANSITION: The Newsletter about Reforming Economies,* The World Bank, 6 (3) (1995), 1-4.

Table I

Development of GDP, Inflation and Unemployment in CEE and FSU.

	GDP, 1989=100							
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996E**	**1997E**
CZ	98.8	84.8	79.3	78.6	80.7	84.5	88.9	93.4
SK	97.5	83.4	77.5	74.3	77.9	83.7	88.7	93.1
H	96.5	85.0	82.5	81.8	84.2	85.4	86.7	89.3
PL	88.4	81.7	83.8	87.0	91.2	97.5	102.9	109.1
SLO	95.3	87.6	82.9	83.9	88.1	91.2	93.9	97.7
BG	90.9	80.3	74.4	72.6	73.6	75.6	75.6	77.8
RO	94.4	82.2	74.0	75.0	77.5	82.9	86.2	90.5
RUS	98.0	85.3	69.1	60.7	51.6	49.5	48.5	49.5
UKR	97.4	86.1	74.3	63.8	51.6	45.5	43.3	44.1
	Inflation							
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996E**	**1997E**
CZ	9.7	56.6	11.1	20.8	10.0	7.9	8.2	8.0
SK	10.4	61.2	10.0	23.2	11.7	7.2	7.0	7.0
H	28.9	35.0	23.0	22.5	18.8	28.0	24.0	18.0
PL	585.8	70.3	43.0	35.3	29.4	27.8	22.0	15.0
SLO	551.6	115.0	207.3	32.9	21.0	12.6	11.0	9.0
BG	23.8	338.5	91.3	72.9	96.2	62.2	120.0	60.0
RO	5.1	174.5	210.9	290.3	136.8	32.3	30.0	30.0
RUS	5.3	92.6	1460.2	840.0	300.0	198.0	60.0	40.0
UKR	4.8	91.2	1210.0	5371.0	981.0	377.0	90.0	50.0
	Unemployment							
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996E**	**1997E**
CZ	0.8	4.1	2.6	3.5	3.2	2.9	3.0	3.0
SK	1.6	11.8	10.4	14.4	14.8	13.1	13.0	13.0
H	1.9	8.5	12.3	12.1	11.5	10.9	11.0	10.0
PL	6.3	11.8	13.6	15.7	16.0	14.9	14.0	14.0
SLO	5.8	10.1	13.4	15.4	14.2	14.5	14.0	13.0
BG	1.7	11.1	15.2	16.4	12.8	11.1	12.0	11.0
RO		3.0	8.4	10.4	10.9	8.9	10.0	10.0
RUS		0.1	0.8	1.2	2.2	3.2	5.0	8.0
UKR		0.0	0.3	0.4	0.3	0.6	2.0	9.0

Source: WIIW Handbook of Statistics 1995. P - preliminary figures; E - estimate.

Table II

Regression Results: Analysis of Voters' Preferences

CZ	Party	R^2	Intrcpt	t-stat		Unempl	t-stat		Moravia	t-stat	
76 obs.	ODS[1]	0.38	33.30	33.31	***	-1.48	-4.25	***	-2.73	-2.60	***
	ODA[1]	0.23	7.48	9.83	***	-0.46	-1.72	*	-2.45	-3.07	***
	KDU-CSL[1]	0.43	4.80	5.81	***	-0.09	-0.32		5.82	6.71	***
	OH[1, 2]	0.45	5.57	22.22	***	-0.34	-3.91	***	-1.06	-4.02	***
	LB[2]	0.18	12.27	18.85	***	0.92	4.07	***	-1.14	-1.67	*
	CSSD[2]	0.43	7.36	22.34	***	0.11	0.99		-2.41	-6.97	***
	LSU[2]	0.31	7.18	10.42	***	0.62	2.58	**	-4.15	-5.74	***
	SPR-RSC[3]	0.07	5.50	8.60	***	0.44	1.98	**	-1.38	-2.06	**
	HSD-SMS[2, 4]	0.90	0.37	0.63		0.04	0.20		14.13	22.46	***
SK92	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**		**H.Min.**	**t-stat**	
38 obs.	KDH[1]	0.45	6.56	2.76	***	0.39	1.90	**	-0.18	-5.27	***
	ODU[1]	0.05	5.02	3.90	***	-0.10	-0.90		-0.01	-0.42	
	DS[1]	0.20	4.97	5.73	***	-0.16	-2.18	**	-0.01	-0.82	
	HZDS[2, 3]	0.52	47.95	8.17	***	-0.50	-0.98		-0.43	-5.00	***
	SDL[2]	0.27	9.29	3.07	***	0.67	2.55	**	-0.15	-3.45	***
	SDSS[2]	0.19	2.92	2.51	**	0.16	1.62		-0.05	-2.89	***
	SNS[3]	0.41	13.48	7.90	***	-0.55	-3.68	***	-0.03	-1.30	
	MK[5]	0.99	-0.01	-0.01		0.01	0.08		0.70	58.00	***
SK94	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**		**H.Min.**	**t-stat**	
38 obs.	KDH[1]	0.45	9.30	3.88	***	0.23	1.12		-0.18	-5.21	***
	DU[1]	0.35	13.64	8.36	***	-0.49	-3.47	***	-0.02	-0.81	
	DS[1]	0.41	5.26	9.06	***	-0.17	-3.26	***	-0.02	-1.80	*
	HZDS[2, 3]	0.60	39.84	7.97	***	0.08	0.17		-0.48	-6.58	***
	SV[2]	0.08	10.91	6.62	***	-0.01	-0.06		-0.04	-1.56	
	ZRS[2]	0.27	5.85	3.56	***	0.25	1.75	*	-0.09	-3.63	***
	SNS[3]	0.35	8.39	7.12	***	-0.27	-2.67	***	-0.03	-1.82	*
	MK[5]	1.00	0.56	0.90		-0.07	-1.36		0.95	106.11	***
H	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**				
20 obs.	MDF[1]	0.28	14.03	11.84	***	-0.15	-2.62	**			
	Fidesz[1]	0.01	7.47	8.68	***	-0.01	-0.33				
	SzDSz[1]	0.37	25.40	14.00	***	-0.29	-3.28	***			
	MSzP[2]	0.12	27.10	7.44	***	0.28	1.54				
	MP[2]	0.36	-0.80	-0.58		0.22	3.17	***			
	KDNP[3]	0.01	6.85	4.15	***	0.03	0.35				
	FKgP[3]	0.02	11.02	5.41	***	-0.07	-0.66				
	MIEP[3]	0.04	1..90	1.99	*	-0.04	-0.88				
PL	**Party/Cand.**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**				
49 obs.	UD[1]	0.12	13.20	7.23	***	-0.24	-2.47	**			
	BBWR[2]	0.12	6.86	8.64	***	-0.10	-2.49	**			
	UP[1, 2]	0.00	6.69	5.45	***	-0.01	-0.21				
	SLD[2]	0.18	13.04	5.52	***	0.40	3.19	***			
	PSL[2]	0.01	17.05	3.81	***	0.12	0.52				
	KPN[3]	0.12	7.69	8.17	***	-0.13	-2.61	***			
	Kwasniewski	0.33	32.58	6.74	***	1.21	4.76	***			
	Walesa	0.33	67.42	13.96	***	-1.21	-4.76	***			

Notes: Coefficient estimates, t-statistics and significance levels (*** significant at 1 % or less, ** 5 % or smaller, * 10 % or smaller). Sample sizes are in the first column.

Political orientation: [1] proreform party, [2] left-wing party, [3] nationalist party, [4] party advocating Moravian interests (Czech Republic), [5] party advocating Hungarian interests (Slovakia).

Table III

Regression Results: Analysis of Voters' Preferences, groups of parties according to their political orientation

CZ	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**		**Moravia**	**t-stat**	
76 obs.	REF	0.41	58.77	43.00	***	-2.44	-5.11	***	-2.67	-1.86	**
	LEFT	0.49	31.00	30.42	***	1.73	4.87	***	-8.94	-8.35	***
SK92	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**		**H.Min.**	**t-stat**	
38 obs.	REF	0.34	16.56	5.11	***	0.13	0.46		-0.20	-4.27	***
	LEFT	0.29	15.74	3.55	***	1.00	2.57	**	-0.23	-3.58	***
	NAT	0.57	65.53	9.43	***	-1.10	-1.82	*	-0.51	-4.97	***
	HUN	1.00	0.88	1.18		-0.12	-1.77	*	0.95	87.70	***
SK94	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**		**H.Min.**	**t-stat**	
38 obs.	REF	0.47	28.25	8.84	***	-0.22	-1.18		-0.23	-4.61	***
	LEFT	0.24	20.00	6.22	***	0.32	1.75	*	-0.16	-3.31	***
	NAT	0.61	52.22	9.90	***	-0.22	-0.73		-0.54	-6.58	***
	HUN	1.00	0.56	0.90		-0.07	-1.36		0.95	106.11	***
H	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**				
20 obs.	REF	0.53	49.89	22.70	***	-0.46	-4.52	***			
	LEFT	0.32	29.32	8.27	***	0.51	2.91	***			
	NAT	0.12	23.55	11.05	***	-0.16	-1.55				
PL	**Party**	**R^2**	**Intrcpt**	**t-stat**		**Unempl**	**t-stat**				
49 obs.	REF	0.09	26.76	8.76	***	-0.36	-2.21	**			
	LEFT	0.11	30.09	7.52	***	0.52	2.47	***			

Notes: Coefficient estimates, t-statistics and significance levels (*** significant at 1 % or less, ** 5 % or smaller, * 10 % or smaller). Sample sizes are in the first column.
Classification of party groups:
CZ: REF = ODS + ODA + KDU/CSL + OH + D92 + SCSP + KAN; LEFT = LB + CSSD + LSU + HZDJ; **SK92:** REF = KDH + ODU + DS; LEFT = SDL + SDSS + SZS + SZ + KSS; NAT = HZDS + SNS + SKDH; HUN = MK + MOS; **SK94:** REF = KDH + DU + DS + HPCS; LEFT = SV + ZRS + KSS + NS + SPK; NAT = HZDS + SNS + KSU; HUN = MK; **H:** REF = MFD + SzDSz + Fidesz; LEFT = MSzP + MP + MSDP + AS; NAT = KDNP + FKgP + MIEP; **PL:** REF = UD + BBWR + UP; LEFT = SLD + PSL. See Appendix II for full names of the parties.

Table IV

Regression Results: Analysis of Voters' Preferences, pooled sample

	R^2	**Unem**		**CZ**		**SK**		**H**		**PL**	
REF	0.84	-0.34		51.85		23.01		44.60		26.54	
t-stat		-3.54	***	4.05	***	14.20	***	18.51	***	13.28	***
LEFT	0.47	0.28		32.40		19.55		31.62		34.50	
t-stat		2.74	***	38.24	***	11.53	***	12.55	***	16.50	***
NAT	0.80	-0.71		8.40		55.62		34.31		18.26	
t-stat		-5.15	***	7.28	***	24.07	***	9.99	***	6.41	***

Notes: Coefficient estimates, t-statistics and significance levels (*** significant at 1 % or less, ** 5 % or smaller, * 10 % or smaller). CZ, SK, H and PL refer to country dummies. Sample size: 221.

Table V

Election Results: Czech Republic (CZ), Slovakia (SK), Hungary (H) and Poland (PL)

CZ[1]	1990	CZ[2]	1992	SK[1]	1990	SK[3]	1992	SK[3]	1994
OF	49.50	ODS-KDS	29.73	VPN	29.35	HZDS	37.26	HZDS	34.96
KSC	13.24	LB	14.05	KDH	19.21	SDL	14.70	SV	10.41
HSD-SMS	10.03	CSSD	6.53	SNS	13.94	KDH	8.89	MK	10.18
KDU	8.42	LSU	6.52	KSC	13.35	SNS	7.93	KDH	10.08
		KDU-CSL	6.28	Egyu.	8.66	Egyu.	7.42	DU	8.57
		Rep.	5.98	DS	4.40			ZRS	7.34
		ODA	5.93	SZ	3.49			SNS	5.40
		HSD-SMS	5.87						
Others[6]	18.81	Others[6]	19.11	Others[6]	7.60	Others[6]	23.80	Others[6]	13.06

H[4]	1990	H[4]	1994	PL[5]	1991	PL[5]	1994
MDF	24.70	MSzP	32.99	UD	12.31	SLD	20.40
SzDSz	21.30	SzDSz	19.74	SLD	11.98	PSL	15.40
FKgP	11.70	MDF	11.74	ZChN	8.73	UD	10.60
MSzP	10.90	FKgP	8.82	PC	8.71	KPN	5.80
Fidesz	8.90	KDNP	7.03	PSL	8.67	UP	7.30
KDNP	6.50	Fidesz	7.02	KPN	7.50	BBWR	5.40
				KLD	7.48	TSKMN	0.70
				PL	5.46		
				Solid.	5.05		
Others[6]	16.00	Others[6]	12.66	Others[7]	24.11	Others[6]	34.40

Notes:

[1] Source: Czechoslovak Statistical Office

[2] Source: Czech Statistical Office

[3] Source: Slovak Statistical Office

[4] Source: Olsen (1995)

[5] Source: Central Statistical Office of the Republic of Poland

[6] Refers to the percentage of votes cast for the parties that were not eventually represented in the parliament.

[7] Refers to the votes cast for 20 small parties that were also represented in the parliament.

Table reports percentages of valid votes cast for the individual parties in the elections to the following representative bodies:

Czech Republic - Czech National Council (CNR),
Slovakia - Slovak National Council (SNR),
Hungary - National Parliament, votes cast on the regional lists (proportional vote),
Poland - Sejm (lower house, proportional vote).

List of Main Parties:

CZECH REPUBLIC 1992:

ODS-KDS	Civid Democratic Party & Christian Democratic Party
LB	Left Block
CSSD	Czechoslovak Social Democracy
LSU	Liberal Social Union
KDU-CSL	Christian Democratic Union - Czechoslovak People's Party
SPR-RSC	Union for the Republic - Republican Party
ODA	Civid Democratic Aliance
HSD-SMS	Movement for Independent Democracy - Society for Moravia & Silesia
OH	Civic Movement

SLOVAKIA 1992:

HZDS	Movement for a Democratic Slovakia
SDL	Party of Democratic Left
KDH	Christian Democratic Movement
SNS	Slovak National Party
MK	Hungarian Coalition
ODU	Civid Democratic Union
SDSS	Social Democratic Party of Slovakia
DS	Democratic Party

SLOVAKIA 1994:

HZDS	Movement for a Democratic Slovakia
SV	Common Choice
MK	Hungarian Coalition
KDH	Christian Democratic Movement
DU	Democratic Union
ZRS	Association Workers of Slovakia
SNS	Slovak National Party
DS	Democratic Party

HUNGARY 1994:

MSzP	Hungarian Socialist Party
SDS	Alliance of Free Democrats
MDF	Forum of Hungarian Democrats
Fidesz	Alliance of Young Democrats
KDNP	Christian Democratic Public Party
FKP	Independent Small-farmers Party
MIEP	Party of Hungarian Truth and Life
MP	Workers' party

POLAND 1993

SLD	Democratic Left Aliance
PSL	Polish Peasant Party
UD	Democratic Union
UP	Union of Labor
KPN	Confederation for an Independent Poland
BBWR	Non-Party Block for Support of Reform

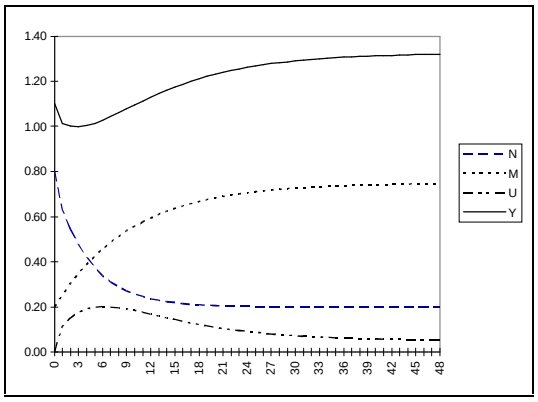

Figure I

Evolution of Employment in the State and Private Sectors, Unemployment and Output; N_0 = .80, M_0 = .20, $U\tilde{}$ = .05, N* = .20, M* = .75, λ = 1.50, θ = .20

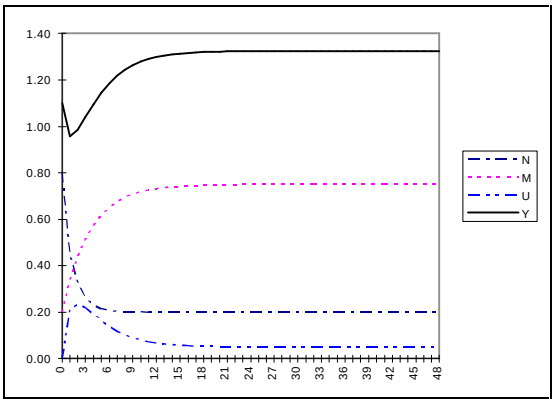

Figure II

Evolution of Employment in the State and Private Sectors, Unemployment and Output; N_0 = .80, M_0 = .20, $U\tilde{}$ = .05, N* = .20, M* = .75, λ = 1.50, θ = .50

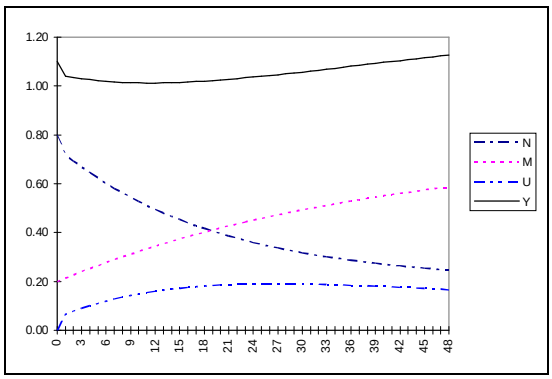

Figure III

Evolution of Employment in the State and Private Sectors, Unemployment and Output; N_0 = .80, M_0 = .20, $U\tilde{}$ = .05, N* = .20, M* = .75, λ = 1.50, θ = .05

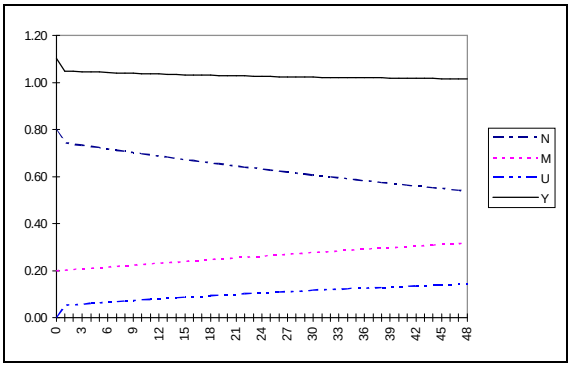

Figure IV

Evolution of Employment in the State and Private Sectors, Unemployment and Output; N_0 = .80, M_0 = .20, $U\tilde{}$ = .05, N* = .20, M* = .75, λ = 1.50, θ = .01

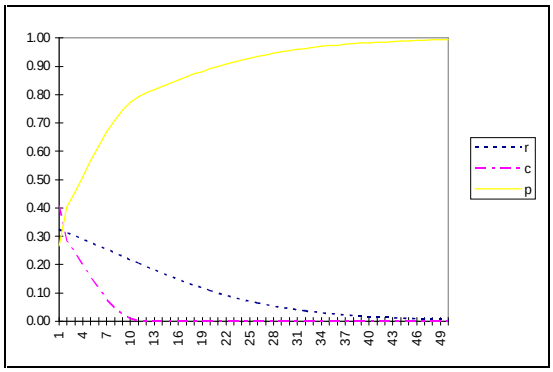

Figure V

Evolution of Probabilities for State-Sector Workers. A worker who held a state-sector job at time t will have a private-sector job with probability r_t, be unemployed with probability c_t and remain in the state sector with probability p_t at time s=t + 5.

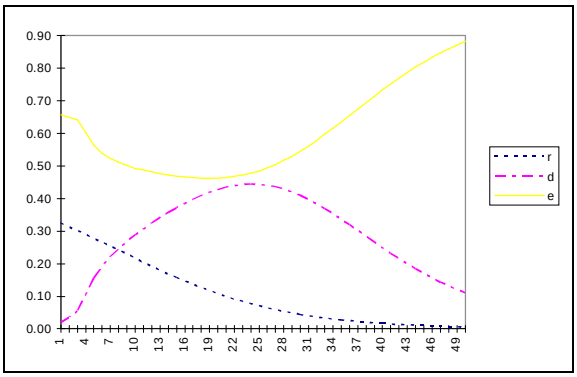

Figure VI

Evolution of Probabilities for Unemployed Workers. A worker who was unemployed at time t will have a private-sector job with probability r_t, hold a state-sector job with probability d_t and remain unemployed with probability e_t at time s=t + 5.

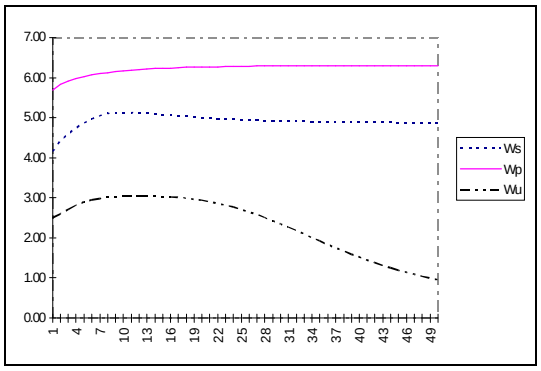

Figure VII

Evolution of Expected Utility Functions of Workers who are Employed in the State Sector (Ws), Private Sector (Wp) or Unemployed (Wu) at Time t. Legend: 10 period time horizon, $\sigma_t = .10$, $\delta = .8$, $v(w_t) = w_t^{0.8}$.

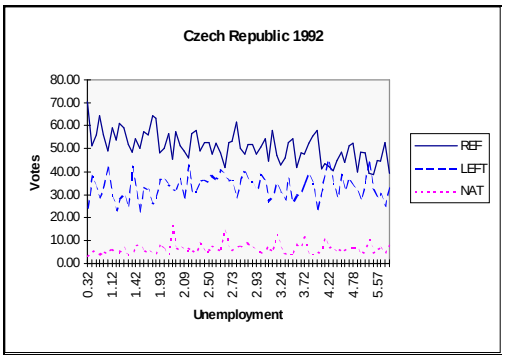

Figure VIII

Relationship between Unemploy-ment and Political Preferences, Groups of Parties

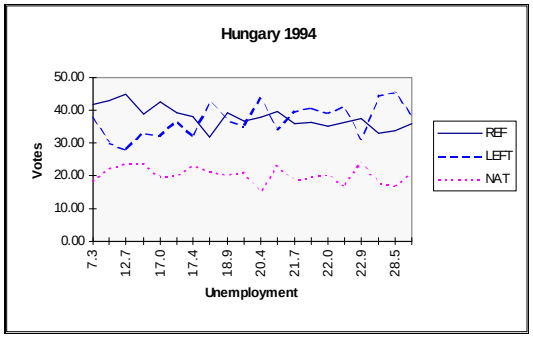

Figure IX

Relationship between Unemploy-ment and Political Preferences, Groups of Parties

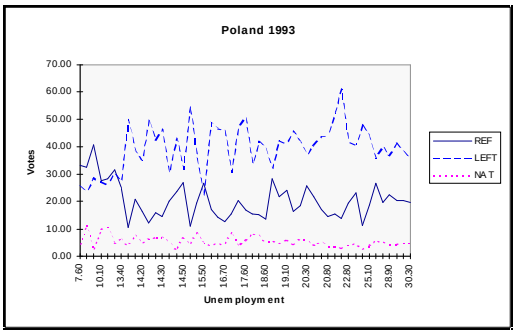

Figure X

Relationship between Unemploy-ment and Political Preferences, Groups of Parties

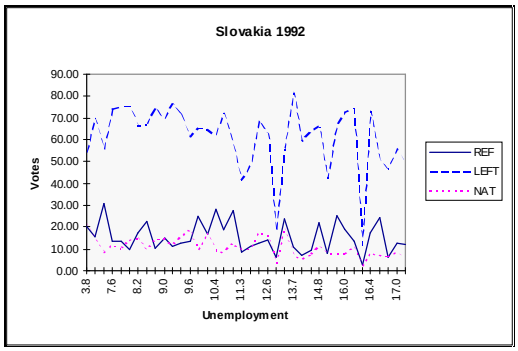

Figure XI

Relationship between Unemploy-ment and Political Preferences, Groups of Parties

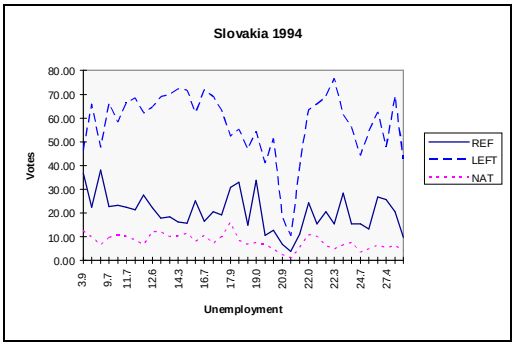

Figure XII

Relationship between Unemploy-ment and Political Preferences, Groups of Parties